



PREPARING IMAGES FOR PRINT

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THE PRINT

Images on your phone have a lifespan of a few seconds on social media whereas a print can last a lifetime and beyond.

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A user's guide to successful prints for Otley Camera Club

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"The negative is everything, the print is all." – Ansel Adams

PREFACE

How often do you look at posts and pictures on social media? For many it will be many times a day with the average time spent looking at each post being around three seconds. Why do we post images, is it really to share with friends or more about self-gratification.

In three seconds, we cannot really get a feel for an image. Is it any good or are friends just feeling sorry for a sad person? At five cm square on a mobile phone, any image is going to look OK. So, if you are happy with just posting images on social media, this document is not for you.

Now let's ask the question, how do I improve my photography and the answer may surprise you. Just slow down and look at all your pictures: the good, the bad and the ugly. What makes the good picture look good and what do we do with the duds. What do we have to do to make the good pictures look even better and how can we save time by not taking the bad pictures in the first place.

We start by planning the photoshoot, taking the pictures, editing them on your computer and finally evaluating the results. You could do this evaluation on your laptop or desktop but for me the final image is best looked at when printed. All too often we look at an image on a screen and overlook the detail, whether it be missed focus, a poor composition, or a poor edit. At each stage, we have the opportunity to ruin the image often through a lack of knowledge or by rushing the process. The print sits at the end of the food chain so taking time to review a print enables you to see the mistakes, fix them and if needed seek advice.

A print is a tactile entity which helps you create a long-lasting memory. And unlike a post on social media, you can frame a picture and hang it on your wall for all to see and enjoy for years to come.

Grab a coffee, sit comfortably and let's work through the print process. There are a lot of steps. but you don't need an encyclopaedic knowledge to create a great picture.

WHATS IN THIS GUIDE

The aim of this guide is to explain how to prepare images for printing by the Print Club or Home printer. As will be seen, printing comes at the end of the post processing stage. We'll look at the various stages to try and avoid the pitfalls I encountered in the past.

We'll cover the basic steps but links to more in-depth articles and videos on YouTube are provided should you wish to explore a particular subject in greater depth. And if there are any aspects you would like explaining in more depth, just ask one of the more experienced members.

DIFFERENCE BETWEEN DIGITAL PROJECTED IMAGES (DPI) AND PRINTED IMAGES

Our club projector can project images in a box which is 1920 pixels wide by 1080 pixels high. This represents an image which is around 2 million pixels which is far less than the number of pixels available on modern cameras. Your home TV may have a 4K screen which has a pixel dimension of around 3840 x 2100 pixels which is still less than the output from your camera.

Like your TV, a projector contains a bright light which shines through a grid of coloured 'lenses' to project your image onto a screen. A print however differs in that the light source shines on your picture, goes through the ink layer then is reflected back to your eyes from the white paper behind the ink. This explains why your images on your computer screen never look like your prints as one is an emitted light source, and the other is a reflected image.

Another factor to consider is that a computer screen has a wide dynamic range due to the contrast between the varying degrees of brightness. This helps you watch content such as films and sports on your TV with a perceived high degree of detail particularly where we have a moving picture, i.e. a video. On a printed picture we have a limited amount of contrast, and also a more limited printable colour palette, due to the ink formulation and how it behaves when it is sprayed onto a sheet of photographic paper. To improve the 'colour gamma' printer manufacturers, increase the number of inks in their printers. It is generally recognised, that to get good tones in the shadows and more accurate colour rendition, six or more cartridges are needed. I'll come back to printers later in this article.

Unfortunately, the online print companies who offer budget printing do not match the quality of most good home photo-grade printers. The budget range of online prints is typically under £2 for an A3 sized print whereas a good quality print starts at £5 and can rise to over £10 for a print on fine art paper. In short don't expect a world beating exhibition print for a quid!

Whilst our images on the club projector only have a resolution of around 2 million pixels a print typically has around 19 to 23 times more detail. This can be a double-edged sword as it also shows up any imperfections more easily. Therefore, if you are new to club competitions it may be best to start with PDI entries to hone your skills before you break into the world of printing.

Prints can be expensive when you add in the cost of printing and mounting, typically around £6 to £8 per picture. An image displayed on a social media application is rarely viewed for more than a few seconds, whereas a print is viewed for much longer and creates a memorable experience. If the subject in the picture is a holiday or a family member, ask the question would I hang it on my wall? If the answer is yes, then forget what a judge thinks, just enjoy the picture in the full knowledge you were the photographer.

Remember the biggest advantage of printing is that it slows you down. You take time to appreciate a print and closer inspection helps you gain a more critical eye which in turn can help you become a better photographer. Presentation of the print is the final step in the process, but great prints start in camera.

Further reading: [six reasons to print](#)

PRINTING IS HARD

Printing is actually relatively easy: you send the image to Richard who administers the print club, or you use a home printer. For most club competitions I would settle on using the print club if you don't already own a photo printer. You can get a lot of prints via the print club before you cover the cost of buying your own printer. In addition, Richard provides a mounting service for a small additional cost.

Ask around and members will often say my prints are too dark or they look wrong – usually an excuse for it was a duff image or the print was not prepared correctly.

As we will see, the way to achieve a great picture needs some preparation and a good eye for detail. The steps are not complicated and practice files are included later for you to follow.

For an in-depth look at printing, I would recommend you have a look at Keith Cooper's website: www.northlight-images.co.uk. He has loads of articles and a very large number of informative tutorials on YouTube. Best of all he is based in Leicester, so his recommendations are based on what is available to UK photographers. Another great source of videos is produced by Tim Jones the technical director of [Fotospeed](#).

A RECIPE FOR SUCCESS

What makes a great print? Somewhat surprisingly it has nothing to do with the printer, its about the composition of the image and the effect it has on the viewer.

Our aims for printing are as follows –

- Best possible quality
- Fastest time to completion
- Non-destructive workflow: change mind, rework etc
- Repeatable results
- Improvement over time

We'll look at each stage to see what can be improved -

- selecting the image,
- getting the cropping right, i.e. the composition
- making some editing adjustments, and
- creating the picture including final presentation

SELECTING THE IMAGE

Assuming we are going to enter a competition it is best if we identify twice as many pictures as we need. Don't worry too much if they are not perfect as there are 'things' we can do to turn a bland picture into something eye catching. But there is no substitute for starting with a good image. Remember the old adage, 'you can't polish a t**d'.

Ask yourself, does the image tell a story and is the subject interesting, both to you and a wider audience. If you are new to the club or competitions, showing and sharing your first images can be nerve racking. Fear not, most seasoned members in the club are only too willing to give constructive and positive advice. If you have been to the recent learning sessions on getting off auto, just ask any of the helpers. If you encounter problems in a specific area, we can always organise further training events.

Taking a good image is often about being in the right place at the right time. From time to time the club organises events or will visit a location as a group. As an example, we organised a Film Noir in early 2022 which was a learning curve for all members. The important thing for new members to remember is - all you need to bring is your camera and your enthusiasm. After a few sessions you will gain more confidence and start to develop your own style.

MORE ON COMPOSITION AND STYLE

Lets take a few moments and consider what makes a great portrait. The ideas here can be conveyed into many genres of photography even record and macro. We have to move away from the point and shoot and consider how we can either bend or fake reality so that the viewer sees a picture they would not normally see in everyday life, eg long exposure, macro.

The key to portraiture is lighting the face. But there is no right or wrong composition: you choose the lighting which suits your style or the story you are trying to tell. Consider does it add the appropriate impact and does it fulfil your vision as the artist. Have a look at pictures by well-known artists and photographers for ideas and take advantage of any camera club or other events to practice.

Settling for accepted norms is the enemy of great images. Few if any camera club photographers make great pictures as they get poisoned by judges who have crazy ideas based on outdated folklore. Don't be frightened to try something new, be it composition style or in post processing.

Changing and making fine adjustments can change the mood of a picture or emphasise different elements so take several images for comparison purposes.

Consider lighting for the picture: do I need a backdrop, either plain or patterned, or an environmental background to emphasise context, and also direction of lighting to add interest.

Also consider –

- creating the illusion of depth to add interest
- does the subject evoke an emotion
- reveal the character of the subject etc and create an engagement of the subject with the photographer and with the end viewer. For instance, a close up of a face with deep '*starey*' eyes.

We can create the illusion of depth by techniques we have seen on our recent "Getting Off Auto days" by –

- Selective focus and choosing an appropriate aperture
- Choosing a contrasting background colour, e.g. light or dark background
- Use of tonal values, particularly with black and white pictures
- Use of colour and saturation of the colour, diffused colours as we recede into the background
- Choice of perspective, forced, stretched, or compressed by using different focal lengths, sometimes by breaking the expected norms.

In the advertising world your interest is captured by using what is called the 'Hook'. Examples are –

- Family history and, small children and babies
- Emotions such as love, hate, hope, peace, shock, chaos, and
- Life events, adventures and of course a cute cat

To sum up, what makes a great photograph is often not an accurate portrayal of reality. It is more likely to be something we don't see everyday with your eyes. Safe then to say 'artistic licence is king!'

MAKING ADJUSTMENTS

The first thing to get right is the composition. Remember the aspect ratio of most camera sensors is 3:2. This differs from the 5:4 aspect ratio for many types of printer paper. To fill a sheet of printer paper we therefore have to crop either image or cut a custom shaped opening on our mount board. For a longer explanation about aspect ratio have a look at the following [YouTube video](#) courtesy of Tony Northrup, and a [video](#) by David Bergman.

Ideally, we would cut the opening on our mount board to suit the print, but if this is not important, we can make do with pre-cut mounts for A4 or A3 sized pictures. In either case we must allow a 2 to 3 mm border on our picture which sits behind the opening on our mount. We'll come back to mounts later, but it is mentioned here to remind you not to crop your pictures too tight at the post processing stage.

Next, we need to look at the content. Where do we place the subject of interest? Most judges have an opinion based on photography folklore using the, so called, rule of thirds but a trip to a museum or photographic exhibition will dispel some of these ideas. Artists often use the grand spiral and bird photographers use squares where the centre of the open beak is bang in the middle of the image. The simple answer is, choose what looks right and most pleasing to you as the author.

Following on closely from composition have a good look around the picture:

- are there any blown out highlights
- light areas on the borders
- is the background cluttered or has distracting areas such as bright highlights or dark spots
- is the image sharp where it needs to be and are there any annoying halos

CREATING THE IMAGE FOR PRINT

We cover the software adjustments in a separate general post processing session. It doesn't matter which particular software package you use as they generally share the same basics in style and screen layout. If you are completely new to photography and currently do not use any specialist software, begin by having a read of Appendix A which promotes 'no software no problem'.

For ease this tutorial is based on the Adobe Photographers package – Lightroom Classic, Photoshop and Bridge - as it is widely used in club photography. Remember if you get stuck ask any member of the committee and we will put you in touch with other members who use a particular brand of post processing software.

Here are some common aspects which need to be covered when considering any image and especially prints -

- Look for sensor or dust spots. These must be removed as they just ruin any print.

- Set the crop, does it include the most interesting part of the image. Later in our examples we'll be using Lightroom Classic (LrC) which allows us to create multiple copies of the same image with different adjustments. The advantage of LrC is that all our edits are non-destructive, i.e. the original image is stored separately from the file which contains the edits. In short there is less of a risk that we destroy the original.
- Once the crop is set in LrC press the (letter) I key to show the information panel. If you repeatedly press the I key, it will cycle through various panes showing the details about camera settings and the file size after cropping.
- Most print houses such as DSL Colour Labs, used by the print club, recommend you send in images with a pixel density of 300 pixels per inch. Now look at the cropped print do we have 3500 pixels for an A4 and 5100 for an A3. As long as we are not showing low numbers, say below 2500 pixels and 3500 pixels respectively, the lab should not have any problems printing your image. The latter figures represent around 200 pixels per inch which is generally the limit of human vision. If, however, the image size is too small, we start to lose overall sharpness, the common term used by judges is 'the image is soft'.
- If this is your first attempt at creating an image for print, it is advisable to create a reference print which contains several copies of the same image with different levels of brightness. This is normally a one-off print to check your monitor and the printer produce acceptable brightness in your prints - and helps create a repeatable set of steps to achieve consistent prints. Dark prints are also one of the most common problems with printing, so we cover this in more detail in our examples.

If you get stuck here, give me a shout and we can see what is causing the issue and hopefully fix it.

- Choice of papers is important for fine art prints but this an advanced topic which we'll not cover in this tutorial. With the print club the common choices are gloss or lustre. Personally, I would choose an oyster (a silky pearl) or lustre finish as these are more forgiving.

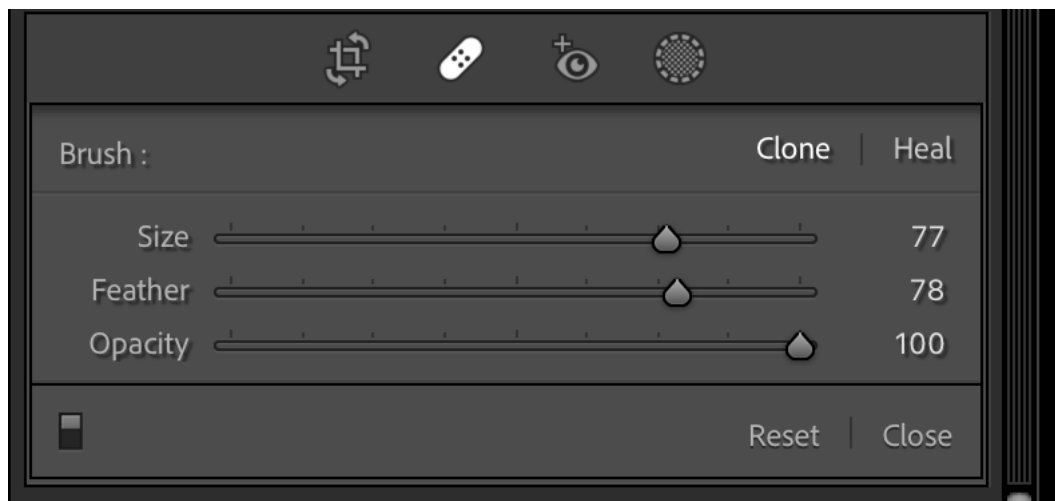
Further viewing [here](#) which also covers what to consider.

DUST SPOTS

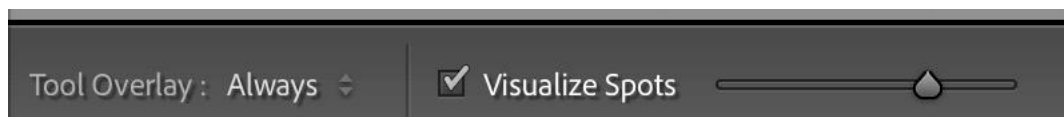
Overlooking dust spots is by far the easiest way to ruin a good print. If repeated it will also make a big hole in your wallet. Have a read of this [article](#) which shows what spots look like. The best way to avoid the problem is to make sure all equipment is cleaned regularly. Please follow the guidance in your camera manual about using the dust spot removal function to clean your camera sensor. Caution, do not touch the sensor or innards of your camera. If you are experiencing problems take your camera to a 'main' dealer for them to undertake this cleaning process for a small fee, typically around £30 to £50.

When changing lenses during any photoshoot, always turn off your camera and leave it a few seconds for the sensor to turn off completely. Most camera sensors hold a static charge which can behave like a dust magnet. Make sure you have your new lens ready, remove the end cap and check it too is clean. Then with your camera pointing downwards change the lenses as quickly as possible. Remember to replace all caps on the freshly detached lens.

Most photographers, who use a camera with interchangeable lenses, will at some point experience issues with dust spots. Lightroom Classic (LrC) has a tool to help you visualise spots and then spot them out. The spot removal tool can be found on the right of the LrC Develop screen, second tool highlighted in the image below –



Next to see any spots, we have to select the visualize spots option on the info bar below the image -



The screen goes black and white which helps you see any potential problems



Its best if you toggle the visualize sports option on and off a few times to locate any issues. Note the visualise spots tool in LrC is a bit hit and miss and for more complex cloning and healing the best results require a trip to Photoshop.

CREATE AN INITIAL CROP

The initial crop allows you to see the composition and get a feel for the amount of editing you may have to do. LrC is non-destructive meaning that you can change your mind or try different shaped crops. There is no hard and fast rule here. If you right click on the picture, whilst in the Develop module you can create a virtual copy of your image. This allows you to set various crops and compare them to see which looks best. The advantage here is that it takes very little additional memory storage for virtual copies. Talk to any photographer and they will all tell you something different about composition as this is a very subjective opinion.

The choice is yours but bear in mind the two following scenarios.

IMAGE SIZE

When in the Develop module, press the I key several times and the information panel top left on your image will cycle through with different sets of information: including camera settings for the image and date the image was taken plus the size of the cropped image.

Ideally, we require an image size which is around 300 px on the long edge for the expected size of your print. If you are sending your image to a print house for printing, such as [DSL Colour Labs](#) have a look at their advice for submitting images. This article also has useful tips for home printing.

COLOUR BALANCE

What we are talking about here is trying to match what the camera saw, to the computer screen, to the final print. Notice I didn't include the photographer as the brain constantly lies by faking 'normal' lighting. This is a normal part of human vision known medically as metamerism.

Your camera has a sensor based on a grid of photosites which sit behind a series of coloured lenses. Each receptor records a voltage which is then scanned in turn to create the grid pattern. Next the camera's software processes the data from this grid to produce an image which gets recorded on your camera's memory card. This is a very simplified summary of the black box but is good enough unless you are a colour scientist. The key message here is the sensor and software follow a fixed process with no trickery along the way.

Your eyes however are easily fooled, and every person has a different view of the perceived reality. For starters 5% of all women and 7% of men are partially colour blind. Some individuals see Red, Green and Blue in varying degrees of tri-chromacy but it also is thought that a small percentage of individuals can see an enhanced number of colours known as tetra-chromacy. Age is another factor as luminosity reduces as we get older which in turn affects how we see contrast and intensity of colour. We can see the metamerism conundrum quite easily. Stand in your living room at night and the lighting looks normal, now look outside and it looks blue. Take a picture of the street and it will look a warm orange depending on the colour of the street lighting. Now go outside and allow your eyes to adjust, typically around 2 minutes, your brain sets this outside environmental lighting as the new norm. Look back at your house and the lights look a warm orange. Which one should you believe is the correct colour balance?

An aside: In good daylight conditions your eyes broadly see about 42 degrees each side of your immediate front vision. At the same time we have a visual awareness with reaches out to around 170 degrees. An example is if a car is overtaking you, your brain becomes aware of its presence before it starts to see it in the main angle of view.

Our eyes have two types of sensors commonly known as rods and cones. The average human eye has around 91 million rods and 4.5 million cones.

The rods are primarily responsible for your low light vision (scotopic vision) and are responsible for perceiving the size, shape, and brightness of visual image. They do not perceive colour and fine detail, tasks performed by the other major type of light-sensitive cell, the cone.

There are three types of cone cells:

- Red-sensing cones (60 percent)
- Green-sensing cones (30 percent) and.
- Blue-sensing cones (10 percent)

Cones are active at higher light levels (photopic vision), are capable of colour vision and are responsible for high spatial acuity.

Now back to our overtaking car, in dim light our perception of colour is reduced and ROSPA research has shown that our field of view reduces significantly as daytime approaches dusk. The result of unseen change in our eyesight leads to a heightened risk of accidents around dusk on our roads during late October – quoted as around a 30% increase by ROSPA. The message here is: be alert and take extra care.

When processing images try and set the environmental room lighting, so it is roughly the same each time you do an editing session. A hood around your monitor can help. If you are restricted to using a laptop watch as you tilt the screen, the brightness and the contrast changes.

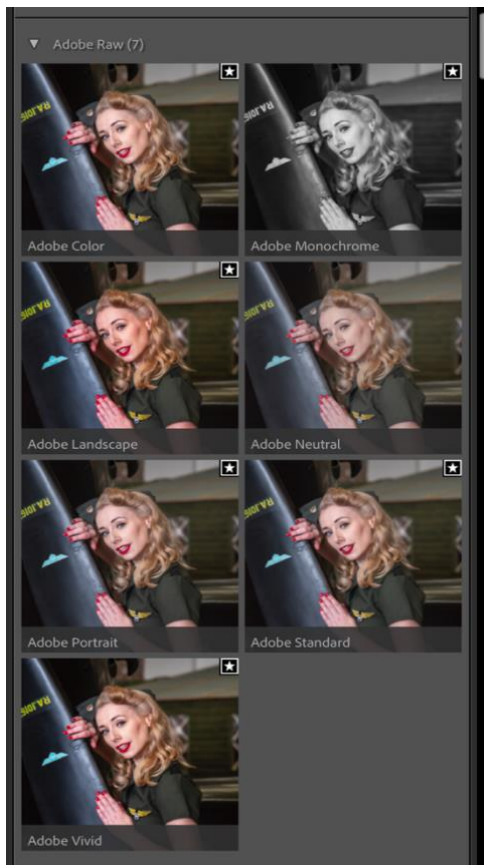
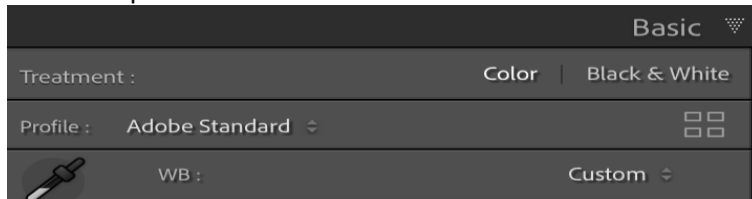
Now for something controversial, if you use a PC to do your edits you may benefit from calibrating your screen using a colorimeter, e.g. products available from Datacolour or Xrite. These are not essential but remove a lot of the guesswork. The reason we calibrate PC screens is that PC's have no common component sets, each manufacturer has different displays, display drivers and preferred settings to make their product look punchy and pleasing. Contrast this with an Apple device where we have a common manufacturing process and once the displays are calibrated in the factory, they tend to be more colour stable. The recommendation for Apple users is to set the screen brightness to around 5 or 6 brightness bars. I have a set of calibration devices and used to check the colour each month and my mac screen has not required any significant adjustment since its purchase in 2015.

I should say that if you intend to make prints on a regular basis, either to sell or enter in high profile competitions consider either buying or borrowing a monitor colorimeter. The secret to consistently good prints is having a workflow with repeatable steps. If you can iron out the problems with the equipment you the photographer become the weak link and hopefully you will get better with time and preparing images for producing prints.

If you are new to printing a quick solution is to download the [Datacolour test picture](#) and adjust your monitor screen till it looks right. Now follow the advice about creating a series of test images at different brightness levels to fine tune your print workflow.

Ok so how do we check colour balance in a picture. If we need accurate colour for say wedding pictures including the bride's dress or pictures being included in a book then we need take a reference picture of either a grey card or [swatch panel](#). If a card is not available, just take a picture of the back of your hand. Take a reference picture each time you get different lighting conditions then load the images into LrC. On the Develop tab > basic panel > WB section use the eye dropper to click

on the grey swatch, then fine tune by moving the sliders just a small amount. If colour matching is not important, just use the eye dropper tool to select an area which would be a neutral grey or some other recognisable colour such as skin tone. If all else fails, simply adjust by eye, you may find it is more pleasing to warm up the tones of say sunsets and set a cooler blue tone for winter shots. Before we leave white balance have a look at the profile section just above the WB sliders. Click on the four squares –



This gives us a set of initial looks which are not affected by sliders in the basic panel and other panels. The profiles selection looks something like the following –

The profiles in LrC allow us to set an initial overall style of an image. These are just options provided by Adobe and profiles you may have obtained from third party suppliers. They are not a hard and fast settings for any individual image so feel free to experiment.

Develop module profiles are just a starting point but the colours here are set independently to any adjustments we make to the sliders or development presets.

SETTING THE BLACK AND WHITE POINTS

Listen to many judges and we get the familiar statements ‘your image is burnt out’ or the darks are blocked. First of all set the basic exposure sliders, then look at the picture. Was the subject very bright or dark when the image was captured. This tells us whether there should be an abundance of darks or lights, now adjust the whites and blacks sliders. These two sliders affect the overall range of the luminance and also affects contrast. Now let’s look at the histogram which shows the distribution of colours from dark to light – see below.

Check the histogram to make sure the warning triangles are not lit as they tell you when the blacks are clogging or we have burnt out in white areas. In this example we have some black clogging. To fix



this, hold down the shift key and click on the words Whites then Blacks to automatically set the values at the clipping points. To check these have been applied press the alt Key (on a PC) or option key (on a Mac) and click your mouse on the actual black or white caption to the left of the sliders. Generally, we can accept up to 5% black clogging but no burn out spots.

As we set the black and white slider clipping points, we may have to adjust other sliders in the basic panel again. And we may have to go round this cycle several times to set the final slider settings.

CONTINUE THE EDIT

Obviously, there are a lot of sliders you can adjust but these will be covered in other tutorials on editing images. Just make sure you have a good amount of contrast if the image requires it. The 'Presence' set of sliders enhance or reduce micro contrast so try changing them, remembering they can go up or down. A word of caution here, never remove too much clarity from faces or you get plastic looking skin which is a complete no-no.

Go careful with the vibrance and saturation. Vibrance works mainly on the warmer tones and will typically enhance orange and red whereas the saturation works across the whole colour range. A tip here is if you increase vibrance more than 20% drop the saturation by 10% as a starting point then fine tune to taste.

When adding sharpening you can add more sharpening for prints than PDI's but beware of getting artifacts/halos around edges. As a last resort Photoshop may be able to help. We use the clone stamp tool, and rather than bore you with a long list of instructions have a look at [Scott Kelby's video](#), starts at 1:24:00.

Another Photoshop trick, which is not well known, is to create a new stamp layer, press ctrl+Shift+alt+E on a PC or command+shift+Option+E on a Mac. Zoom in to 100%. Right click on the new layer and turn it into a smart object. Now go to the filters menu and select Sharpen > Unsharp mask. Keep the radius and threshold at their default settings and increase the sharpen value until you start to see some halos. You can also experiment with the radius and threshold values but generally keep them low. Click on OK to commit the changes. Look on the sharpen layer near the right-hand side. Right click on this icon and select 'edit and blend modes'. The filter values are shown on the pop-up form together with the blend mode. Change this blend mode to darken and click OK. This will remove the halos and you get a very sharp image. If it looks over-cooked just turn down the visibility till it looks OK then add back 10%. Prints can be sharpened more than images displayed on your computer screen.

Sharpening is a complex subject and we do not have time to cover it in detail in this tutorial. In LrC the recommendation is to keep the totals of the sharpening plus noise reduction tools to less than 100% as it is likely to degrade the look of your image if we exceed this recommended limit.

If we have a portrait where the subject is in the middle of the cropped area it is worth going down to the Effects panel and applying a vignette of around -10. This just darkens to corners and edges almost imperceptibly but can help the eyes focus on the main subject of interest. Another effect not to overdo.

If the subject is off-centre then have a look at the masking tool on the toolbar located just above the basic set of adjustment controls. This allows us to add rectangular or elliptical gradients on any part of the image.

FINAL CHECKS BEFORE PREPARING FOR PRINTING

Before you start the process of preparing a print always take a break beforehand. Doing this allows your eyes to relax and your brain to reset as it is all too easy to get a sense of attachment to a particular edit. In short, we go blind and don't see the obvious editing mistakes.

To start the review, view your image at 100% and then carefully scan across the image looking for any issues. Bad edits include not feathering or blending in soft edges, repeating patterns, when doing say a spot healing or cloning session. Always look around edges of dark to light boundaries to ensure there are no annoying halos. Does the image look too contrasty suggesting you have dragged the basic sliders too far to the right. Conversely have you softened skin in a portrait to the point where it looks plastic.

I learnt the following trick from Joel Grimes who is a master portrait photographer. Make the image small on screen and then slowly zoom in. Do you see any bright or distracting areas. The small image is representative of looking on a phone and the zoomed in version is looking at a big image on a screen and print. Repeat this a couple of times.

Have you remembered to leave at least 3 mm around the image as this will get covered by the photo-mount.

And finally, is it a pleasing image.

Further viewing, Karl Taylor covers some of the essentials [here](#).

UNDERSTANDING THE LAB REQUIREMENTS

The Print Club uses the basic print services to help keep costs down for members. The guides can be found [here](#).

You choose the image size, and the default option is set to best fit. If it matches A4 or A3 then it will most likely create a print with no borders. If you are not sure, talk to Richard for advice before you send your images.

All prints you submit should have a colour space of sRGB as this is what the Lab uses to print images. Further down the DSCL guide page you will see references to colour profiles and proofing images. Adobe introduced this feature around 2012 to illustrate changes with certain types of inks and papers but the bad news is it sometimes doesn't work very well as the effects are often exaggerated. Hopefully soft proofing will improve in future software releases. In short, if you are using DSCL's

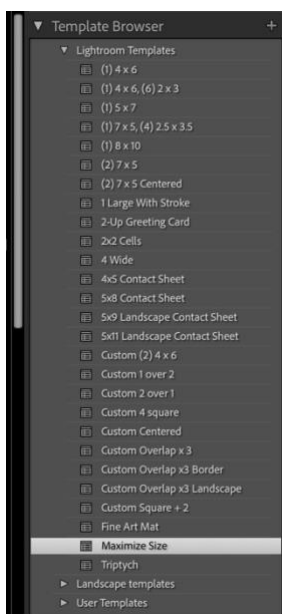
basic range of services you can generally forget these print profiles. At club level this is not usually a relevant factor as there are many other 'aspects' we have covered in the foregoing which will affect your print. And finally, remember you will never get a print to match what you see on a computer monitor, it simply cannot be achieved due to the difference in the way in which light interacts with the different technology/media. If in future, you are intending to print a set of images for a photography award such as LRPS then we can look at this subject in more detail and arrange for your images being colour checked on calibrated equipment.

If this is the first time you have prepared an image for printing, I would strongly recommend you create a 4-image brightness test image. This will check if the images you perceive as being the correct brightness get printed the same. This is a one-off test and can head off the common complaint that images look too dark.

PREPARING A 4 IMAGE BRIGHTNESS TEST USING LIGHTROOM CLASSIC

If you get a set of prints back and they all look either too bright or too light, consider creating a 2x2 matrix with different settings. You can either use a reference picture available on the web or select an image which has a good range of tones to make it easier to inspect the results.

LrC makes this easy to create using the Print module. First of all, we are going to create a set of images with increasing brightness levels and then save them. Next, we create a new print template and add our set of saved images. Make sure the brightness on the target panel is reset to zero so we don't duplicate the brightness and finally create a new image ready either for printing at home or generating a jpg image to send to Richard for onward transmission to the lab. Let's work through the steps using the print module in LrC. First of all, choose a test image which has a good range of tones.



Select the print tab then look in the templates section and choose the Maximize Size template.

This should bring up a full-size image on screen. Now let's look at the right-hand side of the screen.

In the image settings tick Rotate to Fit.

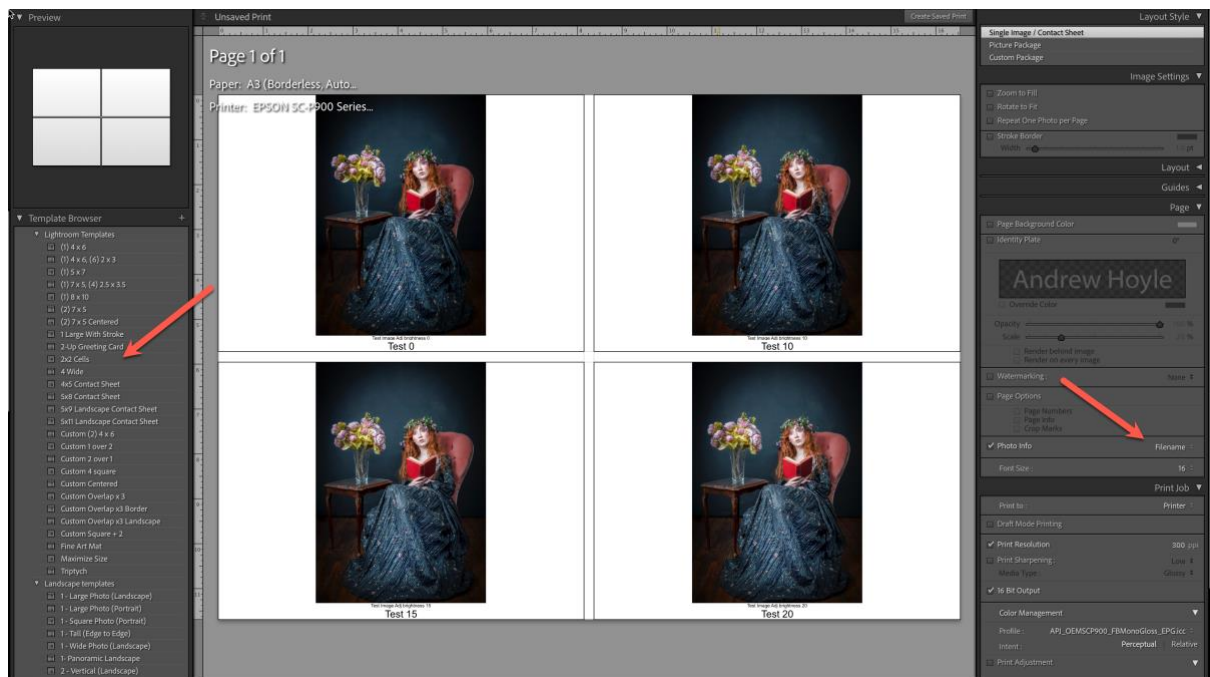
In the Layout tab make sure the margins are set to 0. The page grid should be 1x1 by default. Change the cell size to 297mm by 210mm.

On the Page tab, tick the Photo Info box and change the option to Custom Text. Set the custom text to: Demo brightness adj 0.

On the Print job tab, set Print to JPEG file. Colour profile sRGB and Intent to Perceptual. Click on Print Adjustment to set the brightness to 0.

Lastly click on the Print to File button to save the file to a desired location of your choice. Now let us create three more files with increasing brightness, say 10, 15 and 20.

Now we have our 4 test files, import them back into LrC and select them in the Library module. Go to the Print module again and this time select the 2 x 2 cells template. Next select all 4 images from the image bar and they will populate the 4 cells. In the right-hand column go to the Page section and make sure Photo Info is showing Filename.



In the Print Job section reset the brightness to 0, and finally hit the Print button to generate the composite 2x2 image with titles.

This file can be attached to an email and sent to Richard for onward transmission to the lab for printing as an A4 sized print.

When the print comes back inspect the prints to see which has the best brightness setting. Now set the brightness value in the Print module. Note this brightness value only affects printed output and is not visible on your computer screen. As long as you keep your monitor brightness at the same level and you process your images to the same level of overall brightness you should no longer get any unexpected dark prints.

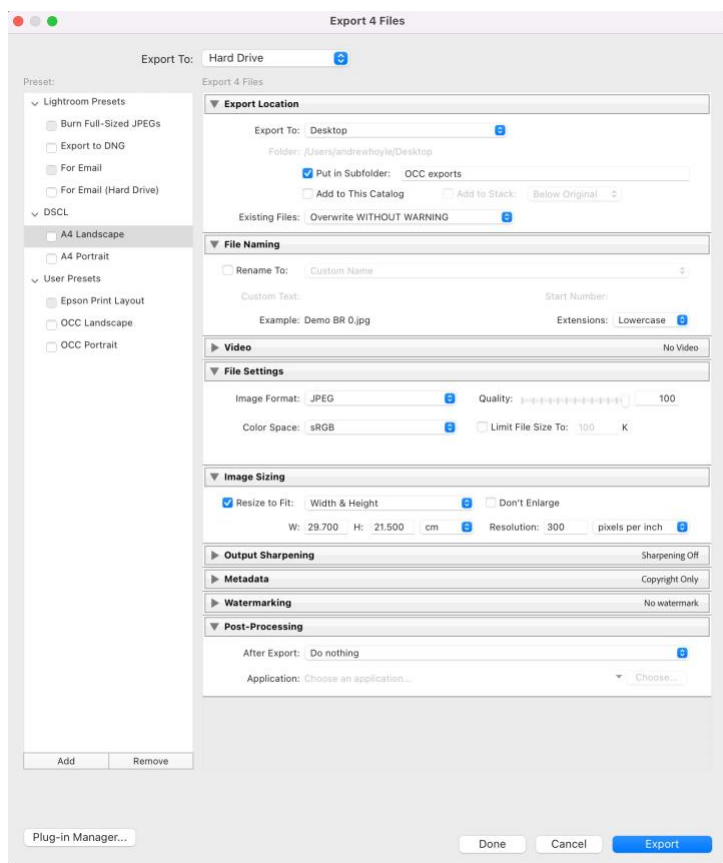
Also see below, regarding advice on hard proofing.

PREPARING AN IMAGE TO SEND TO THE LAB (METHOD 1)

Clearly there are a lot of steps in using the LrC Print module so this method may help, but be aware that it misses out the brightness offset we made when using the Print module to create a JPG file. Unless you are happy with a custom size, it might be best if we start with say A4.

First of all, we need an image which is A4 in aspect. The easiest way to do this is to go to the Develop module and choose the crop tool. Change the Aspect ratio to A4. Note this is just a shape and is identical for A3, only the size changes.

Next go to the Library module, the shortcut is G for grid. Click on the Export button. The following page will appear.



To begin with, we are going to create two templates which should make things easier for future exports. Copy the settings in the right-hand column and when done click on the Add button. This a window asking you to name our new template and select the location. Change the folder location to New Folder and type in DSCL. Click on OK to create the folder. Now on the template pop up type in the name of the new template as A4 Landscape. Repeat the process and change the dimensions to width 21.5 cm x height 29.7. Click on Add as before and just type in A4 Portrait. Select the folder as DSCL and click on OK to save the changes. The dimensions for A3 are 42.0cm x 29.7 cm.

The next time you want to export an image start from the Library module click on the Export button and then click on the desired template under DSCL and it will pre-populate the right hand block in one go. Just click on Export and you are done. Finally go to the output folder and rename the image, assuming you haven't already done this in LrC.

The observant readers of the above will realise we can also use this method to create templates for exporting PDIs for our club competitions. Create another category, say OCC and enter the dimensions in pixels. Our new on-line software uses the following size 1600 pixels wide and 1200 pixels high. This size for internal competitions may change in future but the competition secretary will publicise any changes.

PREPARING AN IMAGE TO SEND TO THE LAB (METHOD 2)

Create the templates as in method 1. To export an image from the Library module just right click on the image to bring up the menu and go to the export option. From there just go to the DSCL section and select the image. This will call up the export form as before with the values pre-populated. Here again remember there will be no brightness offset for dark images. A quick tip here is to add a 0.5 stop of brightness if you are not using the LrC Print module and getting dark prints.

A WARNING WHEN EMAILING IMAGES

Sometimes when you attach an image to an email it appears in the body of the email rather than as an attachment. Outlook is a particular problem as it tries to reduce the size of your email by reducing the size of your image files. To try and stop this happening create your email as normal and then open File Explorer, or Finder on a Mac. Use your mouse to drag the file onto the address part of your email. It should then appear in the header as an attached file rather than simply being displayed in the body of your email.

PREPARING AN IMAGE IN PHOTOSHOP

Here again crop the image to the desired shape and **save a copy**. Next go to the Image menu and select 'Image size'. Type in the dimensions as before and select OK. Next go to the File menu and select Export > Export As. Make sure the file type is set to JPG. Set the Quality to the Max which is 7 on the 2022 version of Photoshop CC. The size should mirror the resize adjustments we just made. Finally make sure the colour space is set to sRGB. Click Ok and we are done.

You can create a test image in Photoshop as before, using test images with different brightness levels. We simply use the Camera Raw filter to set different brightness levels and save the files in a folder, noting the brightness setting in the filename. Next, we create a new document and open our test files. Copy each in turn onto our new document and use the Text tool to add titles under each image. Save the document as a PSD file and then do a second save as a JPG file. This JPG file can then be sent to Richard for onward transmission to the lab.

THE HOME PRINTER

When choosing a printer, the first question is always going to be how much do I need to spend, closely followed by how much does a print cost. A general overview about printers can be found [here](#).

In 2022 most printers on the market will print a good colour image which looks bright and has well saturated colours. Unless you have an expensive printer to compare the prints against it is unlikely you will be disappointed with the results. The big difference is that the 'entry level' printer has a small number of cartridges which limits the printer's ability to mix inks for small changes in colour tone. The range of colours a printer can print is known as 'colour gamut'. It is recognised that to get good colour output we need more than the four colours which are in office type printers. Six colours is a good starting point, but enthusiast and semi pro printers often use between 8 and 12 colour cartridges. This requirement becomes more apparent when we try and print black and white pictures. In the entry level printers, grey tones are created by mixing small amounts of colours to the black ink(s) which can often result in unwanted colour casts.

Entry level printers tend to have small ink cartridges so the cost of ink per print is relatively high. The manufacturers basically sell you the printer at cost and their profit comes from selling you the ink. Entry level printers will typically be able to print an A4, whereas the enthusiast's printers may print up to A3+. The main things to watch out for are: how many ink tanks does the printer have and how big are the ink tanks. This latter consideration is about running costs and the short answer is the bigger the ink cartridges the cheaper the prints become. There is one caveat here, all printers are designed to be used on a regular basis and the bigger the printer the more often it should be used.

There are two main manufacturers of home printers: Canon and Epson. Over the last two years both have listened to their customer base, and both now offer Layout Software. It is embedded into both Photoshop and Lightroom Classic. On a PC it appears on the File > Automate menu.

On a Mac the same applies for Photoshop, but for LrC , Epson Print Layout it is called from the Export button in the Library module. Simply change the Export To dropdown from the default Hard Disk to Epson Print Layout and it will send a full size .tif file to the Epson Print Layout software. The Canon equivalent is found on the File > Automate menu.

The advantage with using this software is that there is just one page to complete.

The consumer orientated printers tend to use coloured dyes and the prosumer printers use pigment. Both types will print fantastic prints. Dye printers are very good at printing vibrant and well saturated images but inks can smudge when printing black and white images on Matt papers. (If possible leave prints to dry for at least two hours.) If you find prints still smudge after drying you may need to use a protective spray to create a protective layer. Pigment inks tend to give a less vibrant and saturated image so you may need to bump up these two settings when developing your images.

It is also worth noting that the more you spend on a printer or a camera you have a longer learning curve to get the best out of that device. So, if you intend to spend a lot on a printer take your time printing test images so you have a known good starting point, which will also help you in identifying problems with your computer set up and not issues with your images. The temptation is to overlook this aspect and try and make adjustments each time you make a print. Your prints will never have a consistent appearance, and you will waste a lot of time and money. More importantly, you stop enjoying printing.

With Epson printers you can use the dedicated layout software. This has a tendency to print a small white border around the picture. If this is not the required intention then it is probably better to use Photoshop or Lightroom to set the paper settings to borderless.

More info about home printers can be found [here](#).

CHOOSING PHOTO PAPERS

There are hundreds of different papers on the market which can be bewildering for newcomers to home printing. Papers range from bargain basement up to premium quality which can cost upwards of £5 per sheet of A3.

To begin with consider buying some general-purpose paper. Epson Photo paper is both cheap and has a neutral colour base. Canon also have a range of basic photo papers. When printing initial test prints, using the manufacturers own branded papers removes some of issues around setting the correct media type. Once you enter the paper type the other settings are recognised by the printer driver and automatically set.

Where possible avoid buying paper from your local market or the bargain basement shops. These papers are usually poor quality and do not give consistent results. Likewise avoid cheap inks from the same sources as they often have gone past their sell-by-date or suffer from poor quality control.

The question is: what do we do when we use a third-party paper from another manufacturer? Here in the UK, we have lots to choose from such as Permajet, Fotospeed, and Canson to name just three. Personally, I would choose [Permajet Oyster](#) as a good starting paper. It is a resin coated paper and is

reasonably durable. It has a semi-gloss finish and is relatively cheap but good quality. A box of 50 sheets A4 starts at £25.

If you are new to printing it is all too easy to spend lots of money on paper. I also use [Permajet's matt proofing paper](#) for checking for bad edits. A box of 150 sheets of A4 costs under £30. See below for issues with using matt papers on Epson printers.

Resin coated papers have a plastic base and covered in resin to provide the finish. They also contain chemicals to increase the perceived brightness by reflecting more blue light. Those chemicals are known as optical brighteners (OBAs) and can start to fade after two to three years. Resin coated papers are your everyday papers and good for printing contrasty images which have deep rich blacks but not recommend for printing images which are more artistic and have a soft appearance by design. If you use this paper for artistic images the shadows can get too black and you lose the appearance of pastel shades. If you have images with a high dynamic range the resulting print can sometimes look a little 2D.

Fibre based papers such as Baryta papers These papers mimic the traditional darkroom papers and are made of alpha-cellulose, a posh word for wood pulp. They are typically coated with barium sulphate and have an off-white and slightly creamy coloured appearance making them suitable for warmer toned colour pictures and monochrome pictures. Papers such as Permajet Gold Silk, Fibre Distinction and Fibre Mono Gloss can cope with images which have a high white point and lots of contrast. They can sometimes make the image more 3D by having a better linearised contrast range across the mid shadows. Expect to pay at least twice the price for a sheet of baryta paper compared to resin coated equivalents. Due to the cost of such papers they tend to be only available in boxes of 25 sheets.

The third common paper is **cotton rag**. These are more for fine art printers and cost substantially more than other types of paper. If you use a lab for these print papers then you will need deep pockets.

Most papers are available in a myriad of paper finishes: gloss, semi-gloss, matt, silk, oyster, lustre, photo lustre, smooth, extra smooth, textured, photo board, etc.

Caution: Some Epson printers have to swap photo black ink for matt black ink when changing paper types from gloss to matt finishes. This can be wasteful so you may decide to stick with one particular type of paper coating.

Choosing papers for external competition entries or awards such as with the Royal Photographic Society, FIAP or PAGB may need careful consideration. In this conversation Rod Whelans, who is an internationally recognised photo printer, looks at the [various types of paper](#) to help images stand out from the crowd. He talks about everyday papers such as Permajet Oyster then goes on to talk about alpha-cellulose papers which add depth and warmth to pictures simply by choosing a different paper finish.

It is also worth noting that if you are entering multiple prints for different competition categories you are free to mix and match different paper types with different paper finishes. If, however, you are looking to enter a panel of pictures for an award such as LRPS, ARPS, then the pictures should ideally be printed on the same paper type otherwise the 'gloss-differential' in the paper finish can cause the panel to be marked down. The technical term you may hear is 'coherence'. This simply means the pictures should display an overall common style and finish. It also refers to subject matter

in some competitions which have a common theme, e.g. monochrome period portraits. In such competitions individual entries are scored then an overall coherence score is given.

HARD PROOFING

This is a technique for folks who have their own home printer and need a print of the highest quality. The temptation is to make trial prints and make adjustments along the way. This method is both expensive in ink and paper and also wasteful. Tim Jones from Fotospeed has a simple method using Photoshop to make a series of test prints on just one sheet of paper. Have a look at his [YouTube video](#) to learn the process.

When buying paper, it is worthwhile starting with a box of A4 paper to match a box of A3 paper on which you intend to print your final picture. If funds are tight, then do the tests on say [Permajet Oyster 271](#) as this is a good all-round paper and should enable you to get a good print when you move over to the fine art range of papers. This applies just to papers which have a sheen, i.e. not matt papers. For the latter I would recommend you get a small box of say [Permajet DS Matt 250 gsm](#) or [Permajet's matt proofing paper](#) to do your hard profiling.

ICM/ICC PROFILES

When you use the manufacturers photo paper you simply set the paper to the specific paper type such as Epson Premium Gloss. The printer understands what the media type is and the colour profile to use. Apart from choosing the paper type everything else is seamless.

When we buy a box of paper from say Permajet they come with an information sheet which tells you

- What media settings to set such as Glossy, semi-glossy, matt etc
- How to get a generic ICM colour profile

The media settings are based on the absorption of the paper when ink is sprayed on it. Each type of paper has its own characteristics and third-party paper manufacturers test their media on the printer manufacturers printing hardware. In short, we follow their advice.

The ICC (or ICM profile) contains data which tells the printer how to colour match data being sent from your software - such as photoshop or lightroom. Most paper manufacturers have a download site where you can obtain generic profiles for your brand of printer. Try these first by printing a reference image, if the colours look wrong most paper manufacturers provide a free service where you can download a test image, print it, then send it back to them for a custom profile to be made. Full instructions on how to do this are on each manufacturer's website, e.g. [Permajet profiles](#). They also provide you with instructions on how to install profiles. Setting the correct media and profile settings can be found in the printer handbook or on the printer manufacturer's website. Each printer model has slightly different instructions so it's not possible to describe them here.

Note: some bargain basement printers do not have software drivers which take advantage of icm profiles. These are fine for family holiday snaps, but the quality and colour rendition may fall short in competitions when displayed alongside more professionally produced prints.

Always keep copies of your test prints you have made with your printer profiles. Careful examination of these will help in deciding which paper is best for your particular image. The Canon professional print software also has an option to print a series of small images with different colour settings. This can be helpful in checking say skin tones or the colour of wedding pictures.

REVIEWING YOUR PRINTS

Before you consider mounting any picture it is best to review it first to see if there are any issues. Ideally, they should have been picked up at the editing stage, but the following two items are specific to printing.

1. Are there any bright spots on the image. If there are look at the print at a shallow angle. Notice the texture of the printed surface, is it uniform or are there anomalies with the bright spots. If there are then it is most likely the whites were blown out and the printer did not print any ink in those areas. A quick fix is to spray the image with a clear coat of artist's protective spray.
2. If the print is a black and white look at the tones in the deep shadows. Compared with what was on your computer screen have they become totally black in the print. This usually happens where the paper chosen has too high a DMAX rating, i.e. too contrasty for the type of image being printed. The solution here is to look at the paper manufacturer's site to see if they have a better paper choice. Alternatively add a curves adjustment and make a small adjustment in the deep shadows by increasing the values just for the deep shadows. This fix is beyond the scope of this document but if you want further information on this subject, search for 'Linearisation' on YouTube.

Another way to edit high contrast pictures, particularly black and white portraits, is to edit the original RAW image in Photoshop's RAW converter. Next open the image in Photoshop as a smart object. Add a camera RAW filter to the smart object and we have two separate sets of smart ACR's which we can use to fine tune the image and increase contrast by going backwards and forwards between the two filter sets. We'll cover this in a practical session when we look at Black and White processing later in the club programme.

PRESENTATION AND MOUNTING THE PICTURE

If you have printed your own picture, make sure you leave it at least 2 hours to dry, preferably overnight, and review it in daylight. The reason for the drying time is that particularly fibre-based papers have a wet-looking sheen when they are first printed then go dull as they fully dry. This phenomenon is known as 'Dry Down' and can lead to pictures at best requiring a different coloured mount and at worst being rejected for mounting. Understanding and choosing the right paper can help here.

When handling unmounted prints always use both hands to avoid the paper getting 'buckle marks' which stretch the emulsion surface – particular prone to resin coated papers. It is nearly impossible to remove these marks so best avoided. And if the paper is of premium quality it is advisable to wear white cotton gloves to avoid sweaty finger prints – the acid on your skin can destroy the coating on your prints if not removed asap.

Before you mount any print remember to check it for any defects such as missed sensor spots, bad edits etc. If all OK, then the next decision is the mount colour. If your print looks light or is well lit, then I would choose a cream mount which tends to be the classic colour for mounts.

If the image is dark or has a high degree of black and high contrast, then consider a black mount with a white core. The core shows through on the bezel and helps frame the picture. I personally keep a few different coloured mounts to just drop over a picture to see which looks best.

If you are cutting your own mounts, pay particular attention to the corners when making the cuts as any problems here reflect on the overall presentation of the picture and in a competition may lead to the judge marking it down. Similarly, the adhesive used to stick the front and back boards affects the overall presentation so always make sure they are well attached. If a mount becomes detached, there is a possibility it will be disqualified particularly in external competitions.

Everybody finds aligning the front and back boards somewhat problematic when mounting pictures. If you are using the print club, I would suggest you leave mounting to Richard as he does a great job. If you print your own images, then consider the following –

- Make a jig to help align the backboard, placement of the image, and correct placement of the front mount
- Before you glue up the mount boards try different coloured front mounts to see which best suits your print
- Consider using adhesive back boards when using a jig as this avoids getting adhesive on your expensive pictures and the fronts and backs are less likely to fall apart when being handled in the judging process.

CREATING A MOUNTING JIG

You need a good strong board around 24" square and four bead edges – either wooden or alloy. The top and sides of the beads should be cut and affixed to the back board to give a snug fit. The bottom edge just needs a small section in the middle to hold your mounts in place but give you room to lift the boards out of the jig when the mounts have been assembled. I had a jig made for me as seen below –



To mount a picture, insert an adhesive back board into the jig. Next add the picture followed by the front mount. Move the picture so that it is covered on all edges by the front mount. Next put a weight on the picture like a bag of sugar to hold it in place. Remove the front mount and peel around 3 inches of the protective sheet from the back board. With the picture still in place pat down the picture onto the revealed adhesive section. Now remove the weight from the picture and carefully remove the rest of the adhesive cover from the back board. Carefully let the picture drop onto the back board and tap it in place with a dry towel. Finally drop in the front board and it should register in place. Check it is correctly aligned before you press the mount into place to form a permanent bond. With practice this jig allows you to mount a picture in around 2 minutes with no mess and perfect registration. One caveat here is make sure you leave your prints for a least two hours to allow them to fully dry before you try to begin the mounting process. Failure to observe this waiting period may result in smeared ink on the picture.

If you are looking at mounting fine art prints on premium papers, you may not wish to use adhesive backing boards so the [T-Hinge method](#) may be a better option. Logan Mounts also do a full range of mount cutters for cutting custom size openings to match your prints.

PRINTING ON AN ECOTANK PRINTER

The latest eco-tank printers from Canon and Epson which have six inks can print reasonably good colour photo prints. To the trained eye they lack some of the tonal graduation of say a 10 or 12 ink dedicated photo-printer but for club competitions they are more than adequate. The secret here is to have a custom colour profile created for your photo papers.

An A3 print typically needs about 2.2ml to print one image. For reference the average ink cost for an Epson printer are as follows –

Printer	Ink Cartridge Size	Ink used (ml)	Cartridge Cost	Cost of ink per print
Epson 8550 Eco 6 carts	70ml	2.13	£15.99	50p
Epson P700 10 carts	25ml	2.13	£27.99	£2.50
Epson P900 10 carts	50ml	2.13	£37.99	£1.60

The Epson printers listed above need at least one print making per fortnight to stop ink clogging up the print head. This requires a test print (nozzle check) being made on plain paper. Note the costs are for illustrative purposes only and do not include the price of the photo-paper.

Canon printers have similar costs for printing but the larger printers such as the A2 imagePrograf 1000 printer also have to do print cleaning cycles which can rack up costs significantly if you are not printing regularly.

In general, the bigger the cartridge the cheaper the ink. More info about the cost of printing using Epson printers can be found [here](#). These are conservative figures as it depends on the type of picture being printed and the quality settings. It also assumes you don't make mistakes and have to print another copy.

The latest Canon Mega-tank G range are cheaper than the Epson Eco printers but at the time of writing there are some aspects that potential purchasers need to be aware of. Currently the G550 is limited to A4 and whilst the colour images are vibrant, black and white prints have slight colour cast due to only have two black/grey cartridges. Currently the only driver for mac users is via air-print which means that you cannot fully turn off the in-built colour management within the printer. In some instances, this may cause a slight colour shift but unless you have another printer at hand you probably won't notice this small issue. No doubt Canon will correct these issues with software releases in coming months. Similarly, there will most likely be an A3/A3+ version to match the Epson 8550 in coming months. At present the global chip shortage is causing production delays across the electronic industry and it may take up to two years to resolve. Further info on [this subject](#) can be found on the Fotospeed YouTube channel.

PRINTING MONOCHROME IMAGES

Both Canon and Epson have a dedicated black and white setting on their 'recent' printers. When using a Canon printer, you go to the printer settings and change the default 'Photoshop manages colours' to 'Printer manages colours'.

The Epson P700 and P900 printers have an 'advanced black and white' settings option which gives very deep rich blacks – see the owner's manual for advice on how to use this feature.

If you use an Eco-printer for black and white images the recommendation is to get a custom colour profile created and let 'Photoshop manages the colours'. More info can be found on the [Fotospeed YouTube](#) channel and [Keith Cooper's YouTube](#) Channel.

Some printers and paper combinations struggle with getting a true black and white print. Also be aware that all black and white prints should be viewed in daylight otherwise they may display a colour cast, generally a dark green. This is often caused by the printer having to mix colours with the blacks to change the required shade of grey.

HINTS AND TIPS

So far, we have covered a lot of ground looking at preparing images for print. Let's now look at a few topics to polish images ready for printing or entering in competitions more generally.

- Always check the image for bad edits. Zoom into 100% and have a look at edges where we have used cut-outs or layered images. Are there any repeating patterns created by poor cloning etc and are there any cloned edges which need to be feathered.
- Now for the border police, do you have any bright spots on the edges of your prints which can distract the viewer away from the subject. If you have then can they be covered in the mounting process, but remember you may have to use a custom sized mount which may change the overall look of the picture.
- Similar to bright spots on the borders, do we have any distracting elements within the picture. Can they be fixed either by cloning or overlaying or under layering another image, then use masks to fix the problem.
- If the problems referred to above are really bad then you may need to consider, subject to the rules for type of competition, separating the subject from the background and then building a new composite background. This is an advanced topic to master, as not only the elements of the background have to be stuck together in such a way they look real, but subject has a harmonious relationship with the added background.
- Is the crop right for the mount you are using. Do you have sufficient space in the picture around the subject. Don't forget the mounting process typically covers 3mm on each edge of the print.
- Look at the picture, does it look slightly soft, i.e. lack of definition. This usually happens if a picture has been over enlarged. If possible, check the number of pixels on each edge and divide it by the size of the print in edges. It should ideally be at least 300 pixels per inch but anything over 200 usually creates a good print. Anything less than 200 and you will need to look at resizing the image in your editing software.

In Photoshop go to the Image menu and select Image Size. Now change the drop downs to show percent. The default is 100%. We can go up to an increase of 130%. To do this we repeat the following three times. Change the new percent to 110% and click on OK. Now

save the image and close it. Reopen the image and repeat the process again resizing to 110%, click on OK and save again. Repeat again for a third time. Note we did not go straight to 130% as the resizing algorithm used by Photoshop works best if you keep increment to a small value.

If you resize images on a regular basis you might want to look at the bespoke resizing software by On1 or Topaz labs. They have a short trial period in which you can evaluate the software. When resizing software do not increase the contrast or add too much sharpening as it will make the picture look too gritty. You may therefore have to try doing this several times.

- The bigger the print the bigger its impact for the viewer. But at the same time when an image is printed at a larger size it should be remembered that any editing issues also become magnified so you must check your edits and images very carefully before you print them. I would always recommend that you have a break following your final edits, preferably overnight, as you go blind after several hours of editing. And if the image is going to be printed on large fine art paper consider creating a small A4 test print on cheap proofing paper.
- If you have used cut outs or composited images, you will need to cover your tracks to make the elements appear to be just one big harmonious image. Make a new stamped layer command + Option + shift + E on a Mac (ctrl + alt + shift + E on a PC). Hit Command + J to duplicate the stamped layer. Now select the top layer and go to the filter menu and select Noise > add Noise. Select a radius of 1 or 2 and hit OK. This will create a more uniform pattern on the image and helps hide the cut and paste effect often seen with composites.
- For composites look at adding a colour lookup adjustment layer. Select a colour to harmonise the overall look, then turn down the opacity to taste. This will help cover up any issues where different image components had a slightly different colour balance or contrast.
- If you have burn out in the background, try using the clone stamp or one of the healing tools to cover the offending areas. Alternative create a new layer and then select a colour fill for the layer. Move the layer under the background layer. Add a mask to the background layer, then get a soft brush with the opacity set to around 10%. Change the blend mode for the brush to darken. Now slowly brush with black over the bright spots and the colour from the fill layer will start to shine through. When done remember to turn the layer blend mode for the brush back to normal.
- For portraits make a new stamp layer and duplicate it. Turn off the top layer. On the first stamp layer add a camera raw filter. Now create an elliptical mask and draw a selection over the face. Increase the brightness to between 0.3 and 0.5 of a stop and increase the sharpness by +20. Next get a brush and set the sharpness to around +40. Draw an H shape across the eyes, down the nose and across the mouth. Click OK to commit the changes.

Now look at the overall image. If it still requires some global sharpening turn on the top layer and go to the Filters menu. Select Other > High Pass filter. Increase the setting to between 2 and 5 then click on OK. Change the blend mode to overlay or soft light. Next turn down the layer opacity to taste.

- Particularly with landscapes and images which have lower contrast you need to understand how different paper finishes can affect the end result. If the image is artistic and has muted

tones with low contrast, i.e., no obvious deep blacks or a high white point then choosing the right paper is crucial. See the paper section for more information.

- If your final print has burn out, consider spraying the image to cover areas which are showing just plain paper with no ink coverage. You will have to spray the whole of image to get a uniform sheen on the print.
- Are the skin colours correct, if not then it may be necessary to start again with the edit, and reprint as needed. This is particularly important with images of children or wedding pictures. Sadly, there is no quick fix here.
- Always wait at least two hours before considering mounting your prints. This period allows the inks to fully dry and may also show up issues with 'dry down'.
- Always review your final prints in daylight to look for colour casts as this is likely to be the lighting in which they will be judged. Commercial prints maybe tungsten light balanced for say an exhibition room, but this is beyond the scope of this document.
- Take care of prints as the surface is usually soft and susceptible to scratching. I use small protective plastic bags and consider these almost a must if the mounted print(s) is going to be entered in an external competition. Most mounted prints are going to be a significant investment. I personally hate getting prints returned which are damaged.
- If you are submitting pictures for an external print competition you may be asked to also submit a digital version for display on a website or inclusion in a catalogue. This highlights a problem: most, prints are sharpened to a higher degree than a projected image so if you submit a direct copy of your 'image for print' it will look over-cooked on a computer screen. If this becomes an issue, create a copy and reduce the amount of sharpening till it looks OK on a good large computer screen. The rationale here is that images on a website will look OK and any images which are going into say a catalogue are going to be much smaller so don't require the same amount of sharpening for a large A3 print.
- Do a final check of the competition rules and make sure you have completed your submission entry, e.g. for internal competitions you will need to register your entry using the online club software on the club website, members section. If you experience any problems, please contact the competition secretary for advice. To avoid disappointment and missing competition deadlines please do not leave registration to the last minute.
- When setting the print size on a home printer the temptation is to fill the page, i.e. print borderless, as it allows you to use an A format sized mount. Long term this can cause the printer's pads to be filled with waste ink, which is both wasteful and may, with heavy use, require the printer to be serviced during its lifespan. The problem is caused by the printer head having to overspray the edges and a small amount of the printer pads when a borderless print is selected. If this is a problem, consider setting a boundary of around 1 - 2mm. This will normally be hidden under the mount border so should not cause a problem. Remember most commercial pre-cut mounts cover around 3mm of the print extremities.
- If you do not intend to use a printer for several weeks make sure and flaps and trays on the printer are closed to keep out dust. You might also want to consider investing in a cover. Similarly check with your printer manufacturer to see if you should keep your printer switched on. Some Canon printers perform cleaning cycles if a printer is not used for a

specific period. With all printers it is worth printing a nozzle check if a print has not been made within the last two weeks. This helps keeping the print head from getting blocked nozzles which can result in wasted ink from cleaning cycles or even worse a maintenance repair by the manufacturer.

USEFUL LINKS

Canon Printers: <https://www.canon.co.uk/printers/professional-photo-printers/>

Canon PRO-300 - making a basic A3 colour print on a high quality Baryta:

<https://youtu.be/eSTDS3QW5yk>

Epson SC-P700 printer Q and A: <https://youtu.be/QZEGk7qfdW8>

Epson print sizes <https://www.epson.co.uk/fag/KA-01467/contents?loc=en-us>

Epson Printers: https://www.epson.co.uk/en_GB/products/printers/c/printers

More advice on Lab printing: <https://youtu.be/msOd8th4ltw>

[Its not a photograph unless you print: https://youtu.be/Biml7olEmrM](https://youtu.be/Biml7olEmrM)

Is it worth printing your own pictures: <https://youtu.be/Mpw0wXNeamI>

Free Software editors: <https://www.cyberlink.com/blog/photo-editing-best-software/327/best-free-photo-editors-windows>

Best Fine art printers: <https://youtu.be/N0kh6HdHweE>

The importance of printing: <https://youtu.be/mx02owNGglY>

Demystifying printing: <https://youtu.be/j-uLVWABmb8>

[Beginners guide to professional printing: https://youtu.be/yhCjFH3oA40](https://youtu.be/yhCjFH3oA40)

What makes a great print - it's not just hitting the print button: <https://youtu.be/DZaa2pk1SuY>

Revisiting Hard proofing: <https://youtu.be/O7krY4Vru5o>

Paper Comparison for Printables: <https://youtu.be/lzEUbPlm9k0>

Avoid Cropping... And Try This Instead (Photoshop): <https://youtu.be/x7r0dzzQ16M>

Beginner's Guide to Professional Photo Printing: <https://youtu.be/yhCjFH3oA40>

Improving your photo prints - Key steps you need to consider: <https://youtu.be/XcSQn6HN5mk>

Does Giclee matter - Fine art print sales marketing speak (a somewhat irreverent observation): <https://youtu.be/oQLfEtoND0Y>

APPENDIX A - NO SOFTWARE NO PROBLEM

Let's take a step back from all the jargon and ask a simple question, do I need any specialist software to make a print? The simple answer is no. Think back to the film days, you took your film to the chemist to get it developed and printed. Now we have digital cameras we just take a USB stick containing images to Boots to print or send them to an online lab to print.

Photographers often try and make things difficult. The most frequent outburst is 'Always shoot in RAW'. If you have just started on your photographic journey this not only means nothing but if you don't have any post processing software your pictures are always going to look flat and drab. The solution here is to make a few changes to your camera's settings. You'll need your camera instruction manual, but don't worry if you get stuck, we are always here to help.

To begin with let's look at the colour settings.

- Set the colour mode to sRGB. This just tells your camera how to handle colour to develop the image in-camera and store the result as an image in JPEG format on your memory card.
- Now look in the shooting menu and look for image type and size. We need to set this to Large or Fine JPG. This tells the camera to process the image and create the largest size image with the finest amount of detail.
- Finally set the white balance to Automatic White Balance (AWB). This lets the camera look at the image and best guess the overall colour of your images.

The above settings are recommended as a good starting point. As you gain more experience, we can introduce other settings particularly when you start using software to develop your images.

The sensor in your camera is where the image is generated. It is composed of a grid of photo receptors which record the image. A common size is 24 MP, which has 6000 x 4000 photo-receptors which is more than adequate to produce prints up to A3 at 300 pixels per inch. We'll come back to this a little later on.

Your camera manufacturer probably gave you some software to let you process your images. Some of this is reasonably intuitive to follow, but if it looks a little daunting, we have some options to get you started.

The changes you made in the camera settings menus lets the camera do a lot of the hard work for you.

Now something we all must do: when you download your pictures to your computer always make sure you have a backup copy. Avoid making changes to these back-up images as they are your get out of jail card should you inadvertently screw up your working copies. Just think, if your memory card contained images of an important family event, this is a once in a lifetime memory which cannot easily be recovered. And do take care if you have to make a fresh copy of back-ups.

Let's now look at the images captured by your camera. If we have a 24MP camera sensor (6000 x 4000 pixels) and we divide the dimensions on each side by 2000 we get 3 x 2. This is the aspect ratio which tells us the shape of the print. We could print a picture 3 inches by 2 inches. Double the size and we get a 6 inches by 4 inches print, double again and we get 12 inches by 8 inches. The bad news is that photographic paper is a different shape e.g. 5 x 4, metric A sizes such as A4 or A3. So, to print a borderless picture we need to crop the image to make it fit.

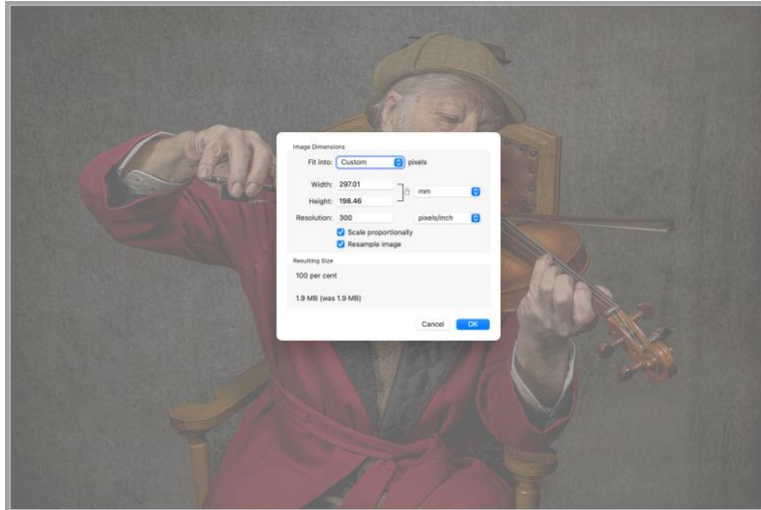
This requires changes being made in software. I hear you cry "I thought you said we don't need any software". You're right I told a fib. Get yourself a stiff drink and we'll crop our pictures. If you are

using a Windows PC we'll be using Print 3D, and on a Mac we use Preview. Both are free applications which come built in with the computer's operating system. First of all, we'll crop a picture for A4 paper then we'll do the same for preparing an image to enter a club competition.

The size of A4 paper is 297mm x 215mm at 300 pixels per inch. For PDI competitions images should be sized to 1600 pixels by 1200 pixels. Further information about submitting competition images can be found in a separate guide available in the members area of the website.

RESIZING AN IMAGE IN MAC PREVIEW

Open the image in the Preview application. Next go to the Tools menu and choose adjust size.



For an A4 sized print, the size is normally 297mm x 210 mm. Our example image is correct on the width but a bit short on the height. In this case it will require a custom sized mount cutting but when submitting the image to the Print club it would still class as an A4 sized print. It may help Richard if you let him know the image size.

RESIZING AN IMAGE ON A PC

PC users have several free software options. Unfortunately, I can't show you any PC screen shots as I only use a Mac. I did find a [useful document](#) on the web.

PRACTICE SESSION

Now that you have read the background information let us prepare some pictures for printing. Import the practice files into Lightroom or Photoshop. For now, we'll stick to Lightroom.

PRACTICE FILE NO. 1

Look closely at the file are there any sensor spots. Select the spot healing tool and turn on visualise spots. Now do you see any problems. Use the square brackets to adjust the size of the brush and set the opacity to around 60%. Brush over the spots and they should disappear. If you make a mistake just hit ctrl + Z (command + Z on a Mac).

Next have a look at the composition and set the crop. Press the I key and notice how the image size is changing. Try different crops both portrait and landscape. If you want to try an A4/A3 crop then with the Crop tool active click on the aspect and change it from original to A4. If this option is not available click on the custom option and enter 297:210 to create the required preset. To switch from a portrait crop to a landscape crop press X.

Now work down through the Basic panel to do your edits. Remember to check the black and white clipping points.

Once you are happy with the edits go to the Print module and try creating a JPEG.

Also create an Export preset for DSCN as described earlier. Check the output files.

PRACTICE FILE NO. 2

Here we start with a dark file. Do the edits suggested above, now change the colour profile in the develop module to Black and White. Adjust the Colour Grading and see if you can match your image to my final image JPG image.

PRACTICE FILE NO. 3

Do we need a crop, where do we crop? Do we keep the red cloth on the wings?

Aside: The cloth was put on aircraft wings to keep out dust because most aeroplanes took off from fields rather than concrete runways. If an enemy was shot at the bullets would go straight through the cloth and so was a good visual clue to the aero mechanics that the ammunition bay needed refilling.

PRACTICE FILE NO. 4

Adjust the brightness, then go to the calibration section and move the sliders to see how they affect colours in your picture. If you have a landscape picture the transformation can be significant and change the overall mood of the picture. Now hit the Reset button and edit as before.

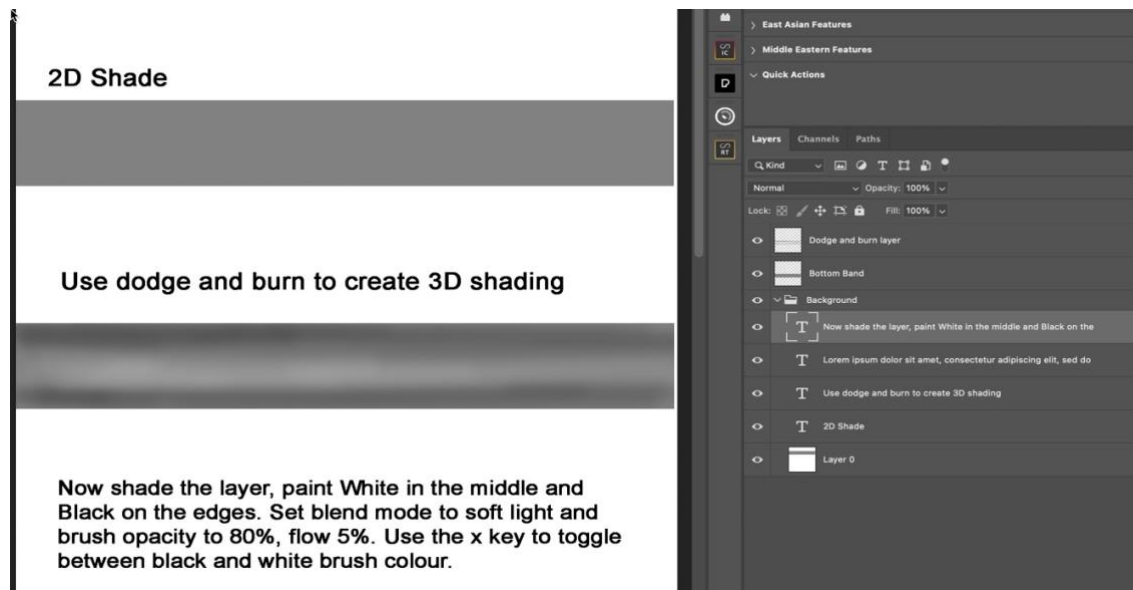
PRACTICE FILE NO. 5

This is a typical studio shot where you can't decide on what the final picture should look like. See what you can do then have a look at my prints as an example. Also remember the image size and decide what size print you could make.

Once you have worked through these examples have a look at your own images and see if you can first of all edit them to get a good competition image, then make the additional adjustments to get them ready for printing.

DODGING AND BURNING

Open the file 3D shading.psd. This appears as follows



The top bar shows a gray oblong which is the 2D representation of our photograph when there is no directional light on the subject. We can add shading to simulate a 3D effect which gives depth to the picture.

To create this, we simply add a new layer and change the blend mode to soft light. Next get a soft brush, set the opacity to 80% and a flow of between 3% and 5%. Hit the D key to set the brush colours to the default black and white. Slowly paint on the edges with black to add some shade. Swap the brush colour to white (press the X key) and paint in the highlights in the middle of the grey box. The overall effect is to create the illusion of a 3D pipe.

This type of post processing is very common in portrait retouching, so is a worthwhile skill to learn. Generally, we lighten the highlights and darken the shadows to enhance the tonal range in the subject.

We could in theory use this method to remove spots or wrinkles from say a model's face. A spot or a wrinkle is simply the pipe used in our example above, consisting of light and dark areas. Use the dodge and burn techniques to lighten the darks and darken the lights. The advantage of this technique is that we can just reduce the appearance of a spot or a wrinkle without removing it completely which usually makes a face have a plastic appearance. Wedding photo-retouchers have a basic rule that you do not remove any blemishes, spots etc which would last more than three weeks unless you have permission from the client. Instead of removing issues you simply tone down the appearance of the 'issue' which was exaggerated by the photographer's camera and lighting when the picture was taken.

CORRECTING SOME COMMON ISSUES

In this section we will look at some of the problems you are likely to face when taking images and how we can fix them in post processing. Some of the examples here use Photoshop as an alternative to Lightroom but the changes being described are also available in Lightroom and many third-party non-Adobe products.

CONVERGING VERTICALS AND BRIGHT SUNLIGHT

Open the image Bolton Abbey in bright sunshine. This displays several problems we can fix. Before we can crop the image, we need to correct the converging verticals. At the taking stage we should have either used a tilt and shift lens, which is an expensive option, or taken the shot from a higher viewpoint. As neither option was available, we rely on software to fix the problem. Open the image in Photoshop and you will be presented with Adobe Camera Raw as the image type is a dng Raw file. We could have opened the image in Lightroom. On the Geometry dropdown we have a series of sliders which enable us to adjust the vertical tilt. See below –



To correct the verticals move the vertical slider to the left. Notice that the image gets squished at the edges. Once we are happy the verticals are OK just select the crop tool and chop off some of the grass in the foreground.

Now go to the basic panel and make the usual adjustments as shown below. Note how we turn down the highlights and open up the shadows. Also when we open up the whites and blacks sliders we are adding contrast. The texture and clarity sliders also add a small amount of contrast but don't overdo these or the image will become gritty.

If you are using Photoshop, then open the image and check the histogram. Is either of the triangles lit indicating burn out in the highlights or clogged shadows – the shadows just look black. These indicate the whites and blacks sliders have been opened up too far. The image may look OK on screen but if it is too bright, then the printer will not be able to lay down ink and the result is a small patch of bare paper. Always check your prints, and if this arises, consider using a protective spray to mask the problem or fixing the problem in Photoshop. In Photoshop we simply add a Levels adjustment and turn down output setting from 255 to around 240. If that doesn't cure the problem then it may be necessary to use the patch tool to cover the offending area.

No printer can print from pure black to pure white. The best printers can manage a luminance range of around RGB 7 to RGB 245 but you may need to experiment with your own images. Keith Cooper at Northlight Images has some luminance charts which can be printed to check these values.



CAMERA NOT LEVEL

Open the image 'Camera Not level.dng' This is the interior of Bolton Priory Church, but sadly it is but the camera was not level.



In this example we have two options: use the crop tool to rotate the image or as in the previous example use the geometry tools to rotate the image. Notice both methods affect the limits of the available crop. Now take a closer look at the back wall, it is sloping away at the ceiling. Use the vertical slider in the geometry section to correct the lean, around -25.

I'll leave you to do the other basic adjustments.

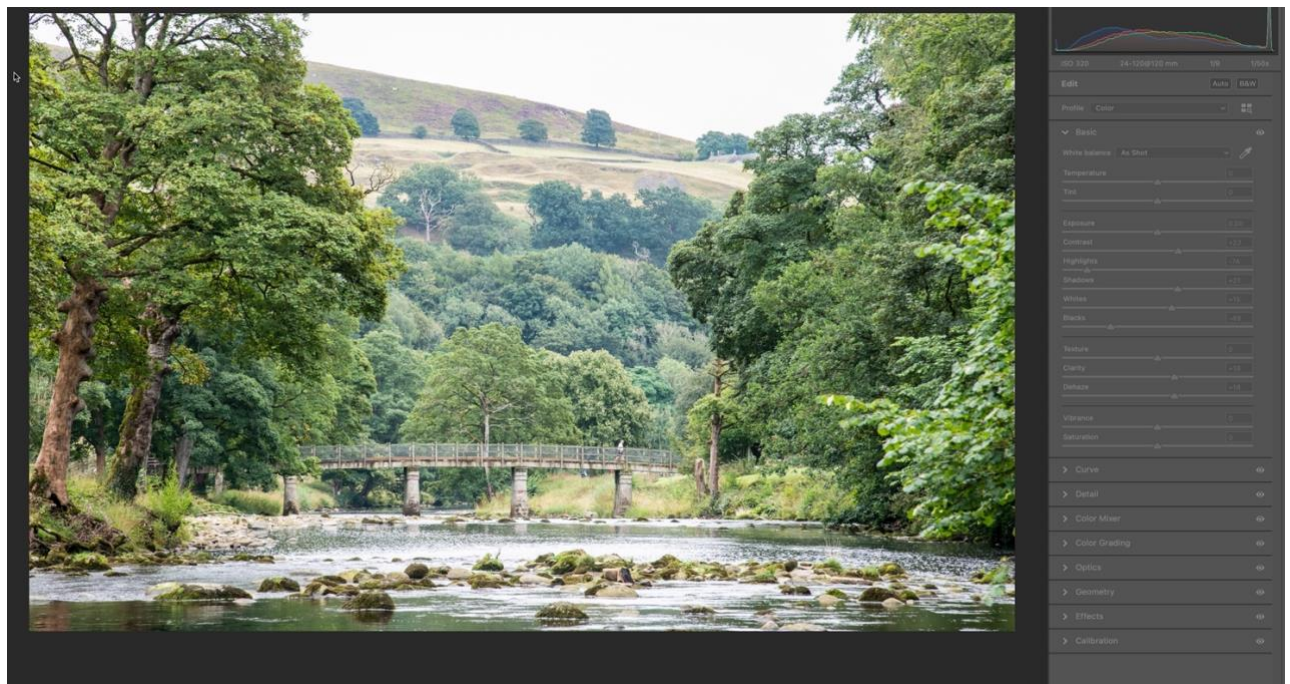
SHOOTING AGAINST THE LIGHT

Depending on the time of day you may have no choice but to take a picture against the light. You may just end up with the subject in silhouette or if the is exposed correctly then the sky gets blown out. The only solution here is to mount your camera on a tripod and take two shots: one exposed for the sky and the other exposed for the subject of interest.

Quite often we see images that just look washed out, for example



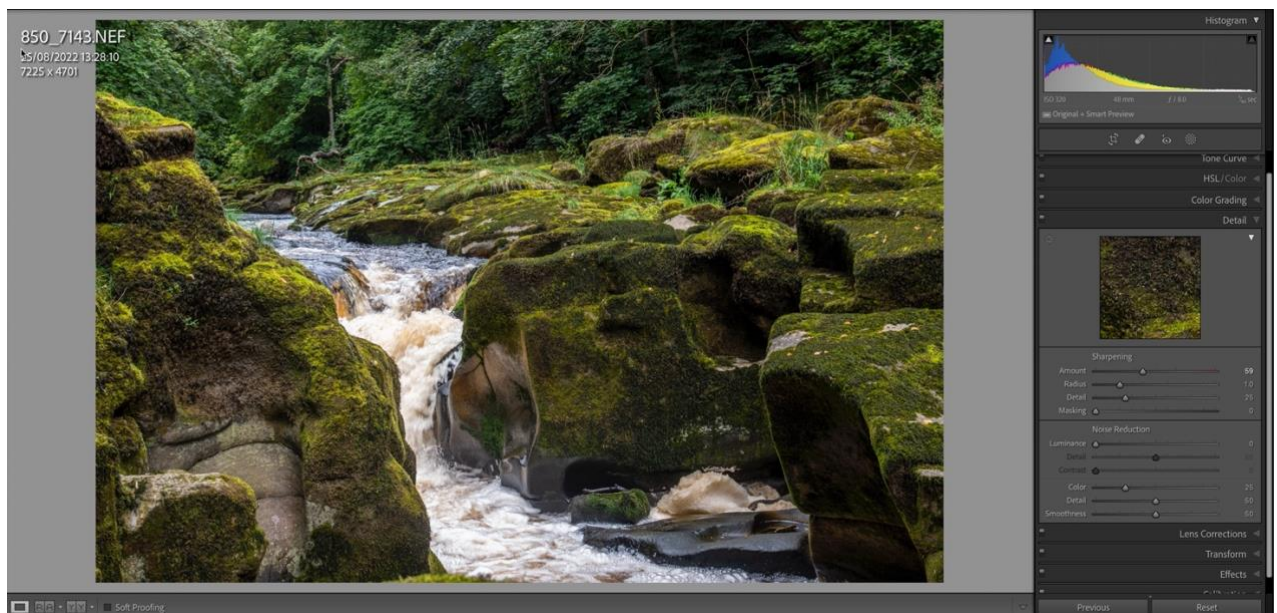
Just add a little contrast and the image suddenly changes –

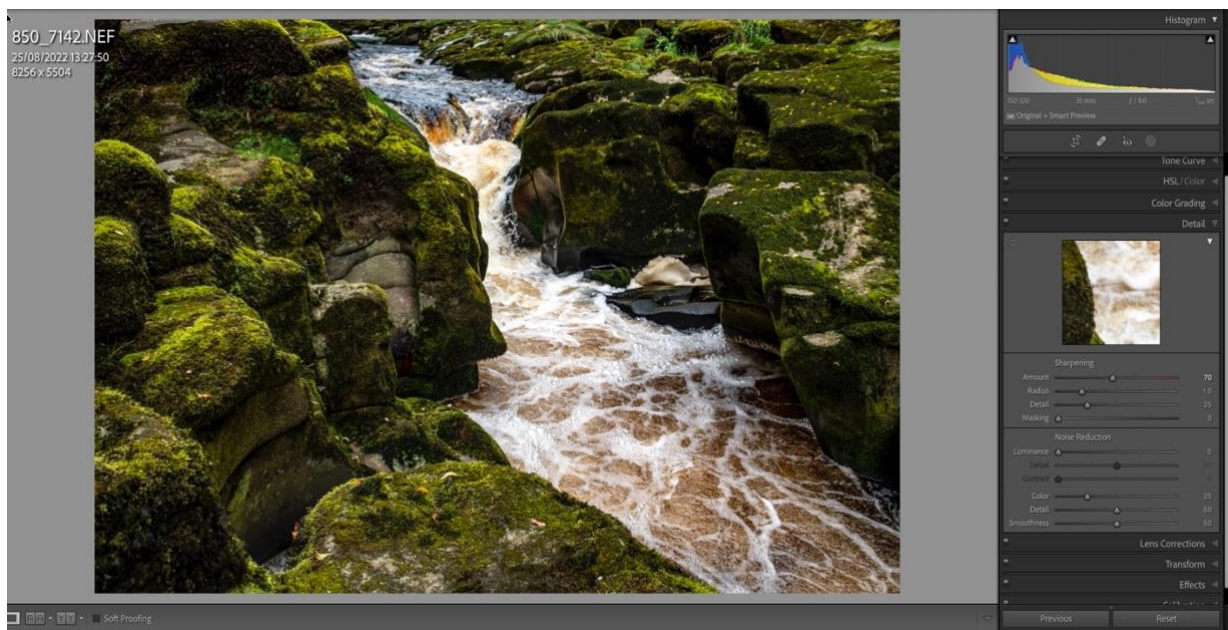


Unfortunately, the sky was a bland grey so we would probably need to blend in a replacement sky. The secret when adding skies is to make sure the replacement was shot at the same angle of elevation, complements the existing sky and does not become the dominant point of interest.

FINDING THE SUBJECT

The following two images are of the Strid upstream from Bolton Abbey. Here are two processed images which you can try and emulate from the given raw files.





To assist our newer and less experienced members, the sharpening settings in the edits are as shown in the side panels. The settings in the basic panels are what we covered with the image looking into the sun, i.e. reduce the highlights, open the shadows, whites and blacks then add a small amount of clarity.

END PIECE

Clearly there is a lot to learn in the process of preparing images for printing. The best advice I can give is just play. If you get stuck feel free to send me an email at: otleycameraclubwebmaster@gmail.com and we can share the problem and hopefully come up with some workable solutions.

The committee are always looking at how we can support members and help improve members knowledge and skills. If you have any ideas, please speak to any committee member to share your views and suggestions.

We will be continuing the Zoom meetings to look at competition images for the YPU exhibition and Interclub competitions. But we are always happy to arrange similar meetings for any member who would like some advice on their images away from the full gaze of the general membership.

To encourage new members to send in prints for competitions we are relaxing the rules about mounting prints for the Food and Portrait competitions. The aim here is to get more members entering competitions. The judges commentary is usually constructive and if required we are always on hand to help you overcome any perceived problems.

And to quote a famous phrase "I'll be back" in the new year judging the Portrait competition and giving a talk on how we can produce better monochrome pictures.

Andy Hoyle
September 2022